APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/637,223	08/08/2003	Zicheng Liu	303631.1	3328

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EXAMINER
CHAWAN, SHEELA C

ART UNIT	PAPER NUMBER
2624	

DATE MAILED: 11/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 August 2003*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9,11-15,17-19 and 22-24* is/are rejected.

7)☒ Claim(s) *10,16,20 and 21* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 August 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date *1/27/05*.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1.   The information disclosure statement (IDS) submitted on 1/27/05, the information

disclosure statement is being considered by the examiner.

Drawings

2.   Examiner has approved drawings filed on 8/27/02.

Allowable Subject Matter

3.   Claims 10,16, 20, 21 are objected to as being dependent upon a rejected base

claim, but would be allowable if rewritten in independent form including all of the

limitations of the base claim and any intervening claims.

Claim Rejections - 35 USC § 102

4.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use
>
> or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-9,11-15, 17, 18-19 and 22- 24 are rejected under 35 U.S.C. 102(b) as

being anticipated by Tuceryan et al., (US. 6,044,168).

As to claim 1, Tuceryan discloses a computer-implemented process for

generating a three dimensional model of an object from a single image, comprising the

process actions of:

obtaining an image of an object (the input image undergoes facial analysis with

respect to the image source model and the analysis data is sent to a synthesizer at

decoder to produce the received output image at the displays (column 3, lines 3-7, 61-67, fig 3, column 4, lines 1-7);

identifying at least one object to be modeled in the image (fig 4b);

determining features of the object in the image (fig 4b, is the face parts of model such as eyes, eyebrows, lips, teeth and nose, column 4, lines 18-24);and

aligning the features of a generic model of the identified object with the features of the object in the image to obtain a tailored model (column 3, lines 65- 67, column 4, lines 1- 7, column 4, lines 60- 67).

As to claim 2, Tuceryan discloses the computer-implemented process of claim 1 further comprising the process action of:

applying texture (fig 11) of the object in the image to the tailored generic model (column 3, lines 61-67, column 4, lines 1-7).

As to claim 3, Tuceryan discloses the computer-implemented process of claim 1, further comprising the process actions of:

determining if the object in the image is rotated out of the plane of the image prior to using the features of the object in the image to align the features of a generic model of the object with the features of the object in the image to obtain a tailored model (column 2, lines 59-65, column 3, lines 1-43);

determining the amount of out of plane rotation of the object in the image (column 2, lines 66-67, column 3, lines 1-43); and

using the amount of rotation of the object in the image to rotate the generic model to match the input image (column 3, lines 1-43).

As to claim 4, Tuceryan discloses the computer- implemented process of Claim 1 wherein the process action of determining the features of the object comprises determining the features by at least one of the following:

using a pattern recognition technique to locate the features (facial analysis is done in two steps initialization and tracking a dynamic facial images);

an edge detection (column 4, lines 26- 51) technique to locate the features; and

using a generic model of the object to locate the features (column 4, lines 52-65).

As to claim 5, Tuceryan discloses the computer-implemented process of Claim 1 wherein the generic model of the object is represented as a linear combination of a neutral object, and some number of object metrics, wherein an object metric is a vector that linearly deforms the object in a certain way (column 3, lines 31-60).

As to claim 6, Tuceryan discloses the computer-implemented process of Claim 4 wherein the linear combination of a neutral object is represented by a mesh of vertices and triangles that represent the shape of the object (column 4, lines 11-17).

As to claim 7, Tuceryan discloses the computer-implemented process of Claim 4 wherein the process action of aligning the feature of a generic model of the object to the features of the object in the image to obtain a tailored model comprise modifying the object metrics so that the generic model matches the shape of the object in the image (column 4, lines 11-65).

As to claim 8, Tuceryan discloses the computer-implemented process of Claim 1 wherein the object modeled is a face (column 3, lines 65-67, column 4, lines 1-25).

As to claim 9, Tuceryan discloses the computer-implemented process of Claim 1 wherein the object modeled is a human body (column 3, lines 65-67, column 4, lines 1-25).

As to claim 11, see the rejection of claim 1.

As to claim 12, Tuceryan discloses the a system for creating a face model from the input of a single image of a face, the system comprising:

a general purpose computing device (fig 1, column 2, lines 62-67); and

computer program comprising program modules executable by the computing device, wherein the computing device is directed by the program modules of the computer program to (column 3, lines 8-30), input a single image of a face (column 3, lines 10-13);

use a face detector to find the face to be modeled (column 4, lines 18-25, fig 2, 25) in the image;

determine features of the face to be modeled (fig 4 and fig 5);

align features of a generic face model to features of the face in the image to obtain a tailored face model (column 4, lines 31-65); and

apply the texture of the face in the image to the tailored generic face model (fig 3, column 3, lines 61-67, column 4, lines 1-7).

As to claim 14, Tuceryan discloses the system of Claim 12 wherein the features of the face to be modeled comprise two eyebrows, two eyes, a nose, a mouth and two sides of a face (fig 4, column 4, lines 18-25).

As to claim 23, Tuceryan the computer-readable medium of Claim 22 wherein said computer-executable instruction for creating a generic linear space representation of the three-dimensional object depicted in the image (column 3, lines 31-60), comprises sub-instructions for:

using an object detector to find the object to be modeled in the image (column 4, lines 18-25);

determining features of the object (fig 4 and fig 5); and

using the features of the object to be modeled to align the features of a generic linear space representation of the object to the shape of the object in the image (column 3, lines 31-60).

As to claim 24, Tuceryan discloses the computer-readable medium of Claim 22 further comprising a computer-executable instruction for changing the characteristics of the linear space model (column 3, lines 52-60) of the object by changing the shape of the linear space model of the object in the image underlying the texture (column 5, lines 40-67, column 6, lines 1-19).

Other prior art cited

5.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Marschner et al., (US.6,950,104B1) discloses system and method for identifying foreground and background portions of digitized images.

Marschner et al., (US. 6,850,872 B1) discloses facial image processing methods and systems.

Chen et al., (US. 6,965,684 B2) discloses image processing methods and apparatus for detecting human eyes, human face, and other objects in an image.

Trajkovic et al., (US.7,027,618 B2) discloses head motion estimation from four feature points.

Contact Information

6.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Sheela C Chawan whose telephone number is. 571-

272-7446. The examiner can normally be reached on Monday - Thursday 7.30 - 6.00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Matthew Bella reached on 571-272-7778. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

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you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

Sheela Chawan
Patent Examiner
Group Art Unit 2624
October 23, 2006